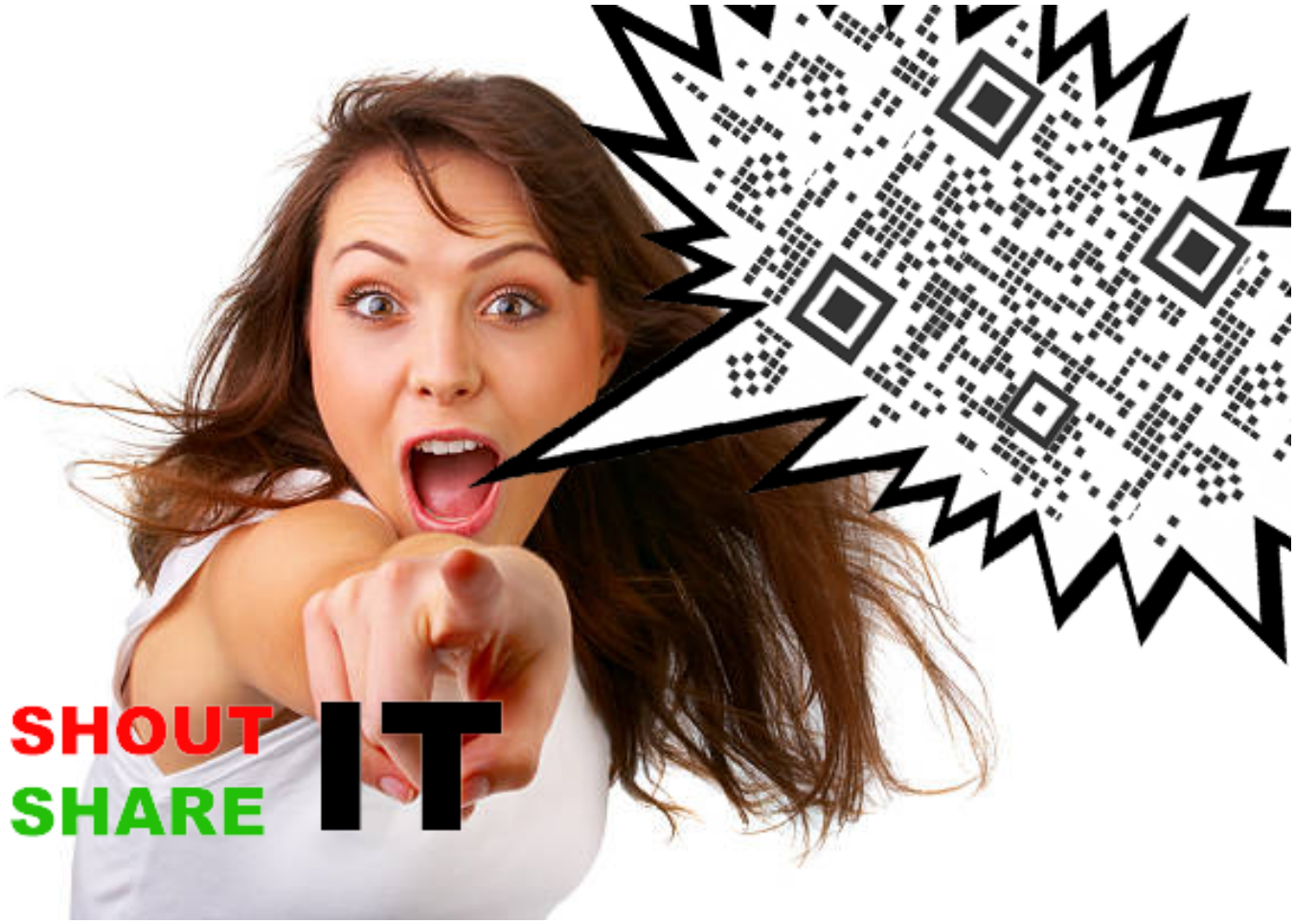
595.762
P97
Insects


SHOUT
SHARE
IT

PART II.] JULY, 1888. [PRICE $4.

RHOPALOCERA NIHONICA:

A DESCRIPTION OF THE

BUTTERFLIES OF JAPAN.

BY

H. PRYER.

YOKOHAMA:

PRINTED AT THE OFFICE OF THE "JAPAN MAIL:" PUBLISHED BY THE AUTHOR'S EXECUTORS.

349851
SMITHSONIAN
MAR 20 1953
LIBRARY

595.762
P97
556
J3
797
1886
pt. 11
SCN1283

30. **Niphanda fusca, Brem. and Grey.** (Pl. 4, fig. 2.)

N. dispar. Brem.

Localities—Nikko, Fujisan.
Time of appearance—June, September.

The specimen figured is the female; the male has more sharply pointed wings, and the coloration of the upper surface is dull purple. It frequents high lands and mountain slopes.

31. **Dipsas sæpestriata, Hew.** (Pl. 4, fig. 3.)

Localities—Yokohama, Tokyo.
Time of appearance—May and June.

32. **Dipsas lutea, Hew.** (Pl. 4, fig. 4.)

Localities—Yokohama, Nikko, Yezo, Asama yama.
Time of appearance—May and June.

33. **Dipsas jonasi, Janson.** (Pl. 4, fig. 5.)

Localities—Yezo, Yokokawa, Asama-yama.
Time of appearance—June, July.

These three species form a very beautiful and exceptional group of the Japanese Lycænidæ, and I therefore treat them together. In the case of *Dipsas lutea* and *D. jonasi*, we have an undoubted case of "duality." *D. lutea* is found both on the mountains and on the plains, but is more abundant in the mountains. *D. jonasi*, so far as my experience goes, is a mountain insect only. *D. sæpestriata*, on the contrary, is found on the low land only, and I have not yet seen it from Yezo. The coloration of the females of all three species is very remarkable—in every instance they have almost completely assumed the coloration of the males, contrary to the rule in most of the Japanese Lycænidæ. The Lycænidæ, we know positively, are descended from ancestors, both sexes of which were originally dull-colored, and the majority of the females retain this characteristic, while the males are in many instances gaily colored; but in this group both sexes are almost exactly alike in point of beauty, the females still, however, generally showing a trace of their original dull color, in the black tip to the wing. All three species are most active from about two hours before sunset until dusk, and during this time the males are to be seen flying about the tops of the trees and engaging, often three or four at a time, in an aërial contest.

34. **Thecla smaragdina, Brem.** (Pl. 4, fig. 6A, 6B.)

Localities—Nikko, Asama-yama, Yezo.
Time of appearance—July, August.

35. **Thecla japonica, Murray.** (Pl. 4, fig. 7A, 7B, 7C, 7D.)

T. fasciata. Janson.
T. regina. Butler.

Localities—Yokohama, Asama-yama, Nikko, Yezo.
Time of appearance—on the plains, May to July; on the mountains, July and August.

36. **Thecla orientalis, Murray.** (Pl. 4, fig. 8A, 8B.)

Localities—Yokohama, Nikko, Asama-yama, Yezo.
Time of appearance—Exactly the same as the preceding species.

37. **Thecla saphirina, Stdgr.** (Pl. 4, fig. 9A, 9B.)

Locality—Yezo.

These four form another very distinct group. The males of all four are a most vivid iridescent green. The females of two, *T. orientalis* and *T. sapharina* are dull brown. The female of *T. smaragdina* has, in all the specimens I have seen, a patch of yellowish brown on the fore-wing, while the female of *T. japonica* is polymorphic and very variable. One polymorphic form of the latter is entirely brown, another has a large patch of shining blue on the fore-wing, a third has a yellowish brown patch on the fore-wing, whilst a fourth has both the blue and yellowish brown; specimens showing a mixture, in every degree of variation, can often be found. Coloration of the female, however, depends greatly upon temperature, as the further north we go, or the greater altitude the specimens are obtained at, the more blue they will, as a rule, exhibit. Mr. Butler has been led from this cause into naming a boreal form, as a distinct species; a very uncalled for proceeding, only tending to produce further confusion, in an already complicated group. *T. orientalis* has also a boreal form, with smaller and sharper outline, which so far has escaped the lust of this insatiable 'species maker.' The males of *T. japonica* are very pugnacious; the Alder is their favourite tree, and they sit on its leaves waiting for any passing rival. With regard to *T. smaragdina*, I was of opinion that it might possibly be a hybrid, but I now think this can hardly be the case, although I have had as yet, no means of testing the point by breeding: but if it be not a hybrid, we have here another case of 'duality' between it and *T. japonica*. The best proof that *T. smaragdina* is probably not a hybrid, is that it is never found about Yokohama, where both *T. orientalis* and *T. japonica* are abundant. The *normal* form of the females of all the four species retains the ancestral dull color, but in *T. japonica* there are *abnormal* forms, particularly boreal, having many degrees of bright coloration, although perfectly distinct from the color of the male, which is *green*, the female being *blue*. This last species is therefore evidently in a state of transition. The females of the *Dipsas* group have attained the same amount of coloration as the males. The females of *Thecla japonica* are undergoing the same process, although the 'species maker' has done his worst to obscure this important fact.

38. **Thecla arata, Brem.** (Pl. 4, fig. 10.)

Localities—Nikko, Fujisan, Gifu, Yezo.
Time of appearance—May to July.

This is a very beautiful mountain insect. Both sexes are nearly alike.

39. **Thecla attilia, Brem.** (Pl. 4, fig. 11)

Locality—Yokohama.
Time of appearance—May to July.

This is the most abundant *Thecla* about Yokohama. The markings on both the upper and under sides vary considerably. In many specimens there is no trace of the greyish white spots on the upper side of the hind wing, and the markings on the under side differ considerably.

40. **Thecla enthea, Janson.** (Pl. 4, fig. 12.)

Localities—Nikko, Yezo, Asama-yama.
Time of appearance—July.

This is not uncommon at Nikko, and is abundant at Asama-yama.

41. **Thecla w-album, Knoch.** (Pl. 4, fig. 14.)

Strymon fentoni, But.

Locality—Yezo.

This *Thecla* is common in Yezo, and varies considerably in size. Mr. Butler has unfortunately obtained a rather large specimen, which he has named *Strymon fentoni*. It is figured in the "Aid," Part. 14, pl. 115. I have several female specimens of *T. w-album* which correspond with the figure, and find that the white line on the under side is very variable.

42. **Thecla pruni, Linn.** (Pl. 4, fig. 15.)

Locality—Yezo.

I have a single example, taken by my collector in Yezo.

43. **Thecla mera, Janson.** (Pl. 4, fig. 16.)

Localities—Nikko, Asama-yama.

This is a dull-colored and somewhat rare species.

44. **Thecla orsedice, But.** (Pl. 4, fig. 17.)

Localities—Nikko, Ontaki-san.
Time of appearance—July.

This *Thecla* resembles in the coloration of its sexes a widely different member of the Lycænidæ, *Lycæna argiolus*. The male is a plain blue, the female is blue with a heavy border of black. The latter is excellently figured in the "Aid," Part 13, p. 107. This resemblance of coloration is very remarkable, and is an example of the recurrence of similarity in the ornamentation of the sexes in two widely separated species of the same group of insects.

45. **Thecla ibara, But.** (Pl. 4, fig. 18.)

Locality—Nikko.

I have a single specimen from Nikko. This species is excellently figured in the "Aid," Part 14, pl. 113.

46. **Thecla butleri, Fent.** (Pl. 4, fig. 13.)

Locality—Yezo.

This is also a rare species, and I have only a single example from Yezo.

47. **Thecla signata, But.** (Pl. 4, fig. 19.)

Locality—Yezo.

This species is not uncommon in Yezo. I have several specimens; they all vary considerably in the markings on the under side.

48. **Thecla frivaldszkyi, Led.** (Pl. 4, fig. 20.)

Locality—Yokohama.
Time of appearance—March.

This is one of the earliest butterflies to appear. It is far from an uncommon species, but owing to its habits is very likely to be unnoticed by the collector. It has a very rapid flight, and always perches on a high spray, generally having a favourite leaf from which it makes excursions, chasing any passing object until tired, and then returning to its original perch. Only one brood appears during the year, and this very often when the snow is on the ground.

49. **Polyommatus phlæas, Linn.** (Pl. 4, fig. 21.)

P. chinensis, Feld.
P. elens, Fab.

Locality—Yokohama.
Time of appearance—March to November.
Food plant—Rumex acetosa, Linn.

This species varies greatly in size and coloration according to the time of year that it emerges in the

perfect state ; early spring forms are small and brightly colored, often with a row of blue spots on the back margin of the hind wing, but as the temperature increases they become larger and darker until they reach a size nearly twice that of English specimens. During the hot months the males are often *quite* black, and this continues until the last brood in November ; a difference of 20 miles is, however, sufficient to account for small light-colour males appearing in one locality and black males in another. Some years ago, in this month, *i.e.* November, I collected the small light-colour males in the neighbourhood of Yokohama, and the next day took black males in Boshiu not more than twenty miles from Yokohama, but by working from Boshiu toward the north, through Kadzusa, I found the dark form to be less abundant until at Kanosan they were entirely replaced by the pale form.

50. **Lycæna bætica, Linn.** (Pl. 4, fig. 22.)

Localities—Yamato, Ogasawara, Yokohama, Ryukyu.
Food-plant—a cultivated Leguminous plant like the scarlet runner, but with pinkish-white flowers, *Dolichos cultratus* (Jap. Fuji-mame).
Time of appearance—March (Ogasawara); August, September (Yamato, Ryukyu); October, (Yokohama).

This butterfly has a most extensive range, and I have taken it in every Eastern country in which I have collected. It is abundant on the Island of Labuan, and also in Ogasawara, and is therefore probably to be found in all the intervening islands wherever its food-plant is cultivated. It is also found in Europe, and is one of the great prizes for the English collector, a few specimens having been taken on the south coast near Brighton. I believe, however, it would soon be no great rarity there if its food-plant were cultivated in suitable localities. It is a very local insect, and seldom voluntarily flies far from its food-plant, to which it is very destructive, the *larva* eating the unfolded leaves and flowers also burrowing into the young pods. It only appears about Yokohama late in the year, at which time its food-plant is in bearing, and as this is not much cultivated it is a scarce species there.

51. **Lycæna argiades, Pall.** (Pl. 4, fig. 23A, 23B.)

L. hellotia, Mén.

Locality—Yokohama.
Time of appearance—March to October.

This species is very abundant, and a succession of broods appears during the year ; they vary much in size, and female specimens are often to be found with more or less blue on the upper side.

52. **Lycæna argia, Mén.** (Pl. 4, fig. 24A, 24B.)

L. japonica, Murray. (Pl. 4, fig. 24C.)

Locality—Yokohama.
Time of appearance—March to November.

It is not without considerable hesitation that I quash the Rev. Mr. Murray's species. I have not yet been able to rear either *L. argia* or *L. japonica*, and do not even know their food-plant, although the species is most abundant; in uniting them I am guided by the fact that *L. japonica* only appears during the spring and autumn, *L. argia* during the intervening warm months.

53. **Lycæna argus, Linn.** (Pl. 5, fig. 1A, 1B, 1C.)

Localities—Fuji-san, Nikko, Asama-yama, Kuriles (?)
Time of appearance—August.

In Japan this is a most variable insect according to locality, and there are many forms; some are blue, others almost puce and again others are distinctly greenish-blue. This last form is most interesting, as the males are always nearly as dark as the females, the greenish scales being sparsely scattered towards the base and margin of the fore and hind wings. I have a damaged specimen from the Kurile Islands, which I believe to be this species, captured by Mr. H. J. Snow. I have noticed at Asama-yama three forms within a few hundred feet elevation, but although individual specimens are very distinct, I am forced to the conclusion, on examination of a large series, that they are all one species.

54. **Lycæna ægon, Schiff.** (Pl. 5, fig. 2.)

L. micrargus, But.

I have a single specimen from the north of the main island.

55. **Lycæna argiolus, Linn.** (Pl. 4, fig. 25A, 25B.)

Locality—Yokohama.
Time of appearance—spring and summer.

There are several broods of this insect. While the male is constant, there are two very dissimilar temperature forms of the female; one has a large amount of black on the upper side, the other, which appears generally later, is much brighter. The second brood often exhibits both forms.

56. **Lycæna lycormas, But.** (Pl. 5, fig. 3A, 3B.)

Locality—Yezo.

I have only seen this species from Yezo where it is abundant. Some male specimens are almost as dark as the females.

57. **Lycæna pryeri, Murray.** (Pl. 5, fig. 16.)

Localities—Yokohama, Yezo.
Time of appearance—May and June.

This is the finest of the blue section of the Japanese Lycænidæ. Unlike the rest it only appears once in the year.

58. **Lycæna euphemus, Hb.** (Pl. 5. fig. 4A, 4B.)

L. kazamoto, Druce.

Localities—Fuji-san, Nikko, Asama-yama, Yezo.
Time of appearance—August.

This is a mountain insect, and is very variable. Some specimens are all brown, in others blue predominates.

59. **Lycæna iburiensis, But.** (Pl. 5, fig. 5.)

Localities—Nambu, Asama-yama.

I have only two very worn specimens from Nambu, and one good specimen from Asama-yama.

Concerning the LYCÆNIDÆ, there are some very interesting points which may be here mentioned. The first is the remarkable difference between the colour of the sexes of many of the species, forming this group, and I have drawn up a table under the following headings illustrating this fact :—

1. Both sexes alike dull.
   - *Miletus hamada* (2)
   - *Thecla attilia* (1)
   - *Thecla enthea* (1)
   - *Thecla w-album* (1)
   - *Thecla pruni* (1)
   - *Thecla mera* (1)
   - *Thecla ibara* (1)
   - *Thecla butleri* (1)
2. Male slightly colored, female dull.
   - *Niphanda fusca* (?)
   - *Lycæna euphemus* (?)
3. Male bright, female dull.
   - *Curetis acuta* (1)
   - *Lycæna argiades* (2)
   - *Lycæna argia* (2)
   - *Lycæna argus* (2)
   - *Lycæna ægon* (?)
   - *Lycæna iburiensis* (?)
4. Male very brilliant, female dull.
   - *Thecla sapharina* (1)
   - *Thecla japonica* (1)
   - *Thecla orientalis* (1)
   - *Thecla smaragdina* (1)
5. Male bright, female also bright, but in a less degree.
   - *Thecla orsedice* (?)
   - *Lycæna argiolus* (2)
   - *Lycæna lycormas* (?)
   - *Lycæna bætica* (2)
6. Female brighter than the male.
   - *Lycæna pryeri* (1)
7. Both sexes nearly equal amount of color.
   - *Lycæna ogasawaraensis* (?)
   - *Amblypodia japonica* (1)
   - *Amblypodia turbata* (?)
   - *Amblypodia loomisi* (?)
   - *Thecla signata* (?)
   - *Thecla arata* (1)
   - *Thecla frivaldszkyi* (1)
   - *Polyommatus phlæas* (2)
8. Both sexes equally beautiful.
   - *Dipsas sæpestriata* (1)
   - *Dipsas lutea* (1)
   - *Dipsas jonasi* (1)

Some of the species do not always conform to their respective headings. There are bright and dull female polymorphic forms of *Thecla japonica,* and temperature forms of others, such as *Polyommatus phlæas,* the male of which becomes nearly black in the summer, and *Lycæna euphemus,* specimens of which from Yezo are bright, especially the males.

The second peculiarity which is noteworthy is that the upper and undersides of the wings are utterly different, presenting a startling contrast. This is of great service to them as a protection from their numerous enemies. I have often watched a dragon-fly attempt to catch one of the Blues, but never saw a capture made; when in flight the Blue at a distance presents only the impression to the eye, of a blue substance moving along irregularly, but if viewed closer the rapid irregular flight of the insect brings alternately into view, greyish-white and blue (or brown in the female). The dragon-fly makes a succession of dashes at his prey, which, if hard pressed, will settle with closed wings, presenting an entirely new appearance, when the baffled pursuer almost invariably abandons the chase.

The third peculiarity is that some of the species are single-brooded, others many-brooded, during the year. In the foregoing table I have placed the figure (1) against the species which only appear once, the figure (2) against those that appear many times in the year, and (?) against those of which I have no information. I have obtained from the table the following result, namely, those that appear once are all without exception tree-feeders, and those that appear many times feed on low plants or creepers; after studying the structure and habits of the *larvæ* of many of the species, I find that they are very slow in their movements, and all have very small heads, with weak jaws, *and can only feed on young fresh leaves.* The trees they feed on only throw out new leaves regularly in the spring, but low plants and creepers grow all the year, from early spring until late in the autumn; therefore, the tree-feeding species can only obtain their food, in a fit stage for eating, *once* in the year, and are necessarily single-brooded; those which feed on lows plants can do so from March to October, and are therefore many-brooded. This law, however, cannot be applied to other genera which have powerful jaws, and appear only *once* in the year and the fact of such being only single-brooded depends upon other circumstances, namely, either the structure, coloration, or habits of the *imago*, which may render them especially liable to be captured by what I term "general enemies" such as bats, spiders, and dragon-flies. Thus with the Hyberniadæ, which always appear in the *imago*, and lay their eggs in the winter months. These eggs soon hatch, and the *larva* feeds up for a short time and then changes to *pupa*, remaining in this stage all the summer, autumn, and until the next winter. I think the reason is obvious. All the *female* Hyberniadæ are either apterous or only have wings incapable of flying, whilst the *males*, although they have very largely developed wings, are somewhat clumsy fliers, rendering them very liable to capture by dragon-flies, if disturbed in the day time, or to become entangled in the nets of spiders at night; *we therefore find them only appearing in the perfect state when it is too cold for any of these enemies.* Again Tæniocampæ, which are strong robust moths, only appear in the spring; these have the habit of buzzing about trees, and they would be rapidly exterminated if they appeared later on, when spiders' webs cover every bush and bats are abundant. I believe that when the life-history of any insect is attentively studied, we shall be able to assign the reason of its single or multiple appearance accurately.

Family PIERIDÆ—Continued (see Page 10.)

Terias biformis, H. Pryer.

T. bethesba. Janson. (Pl. 2, Fig. 11.)
T. læta. Boised. (Pl. 2, Fig. 10.)

Since publishing what is written in page 10, I have, on conjunction with Mr. Nawa, of Gifu, made an extremely interesting and important discovery. It is that *T. bethesba* is the summer form, and *T. læta* the winter form, of one and the same species. This was quite unexpected. Both Mr. Nawa and myself saw female *T. bethesbæ* depositing their eggs on *Cassia mimosoides.* From these eggs we reared many specimens of *T. læta*, but not a single individual bearing the most remote resemblance to the parent form *T. bethesba.* I have, however, reared a single specimen from these *bethesba* ova, which strongly resembles the *hecabe* form of *T. multiformis*, and it is therefore probably a hybrid. The outline of the wing of *T. læta* is pointed, that of *T. bethesba* rounded, and the former is a much larger insect than the latter. I have proposed the name of *Terias biformis* to unite these two forms. The form *T. læta* is only seven days in the *pupa*, but lives for eight months in the *imago* state, during which time it hybernates for from four to five months. On page 10 I state that *T. læta* appears from March to November; this I now see is an error, the reverse being nearer the truth. It appears last in the year in November-December and emerges from its hybernation first in March. I was misled by this fact, not knowing the insect's life-history, into making the statement that different broods of *T. læta* lived from March to November. The *læta* form emerges in the *imago* during the first week in September, or, exceptionally, during the last few days of August, from ova laid by the *bethesba* form in August, taking a remarkably short time to complete its metamorphosis. The *læta* form does not commence to hybernate before November. It hybernates during the cold winter months, but the first warm days in March awaken it; specimens may be seen flying about until May, when they deposit their ova, which produce the *bethesba* form in July. A most interesting problem concerning these two forms remains to be solved; what is the reason for or benefit gained by this extraordinary change, which is, I think, without parallel among Lepidoptera?

Family LEMONIIDÆ.

60. **Libythea lepita, Moore.** (Pl. 5, fig. 13)

Localities—Yokohama, Nikko, Yezo.
Food-plant—Celtis sinensis, Pers.
Time of appearance—July to May.

There is only one brood of this butterfly. It is the longest lived, in the perfect state, of any of the Lepidoptera. It emerges from the *pupa* early in July, and lives until the following May. It retires to its

hybernaculum soon after its emergence, and remains quiescent until the following March, when it is awakened by the first warm day and may then be seen depositing its eggs on the unopened buds of the Celtis. The *pupa* is suspended by the tail after the manner of a *Vanessa*. It varies considerably in markings and size.

Family NYMPHALIDÆ.

61. **Dichorragia nesimachus, Boisd.** (Pl. 5, fig. 10)

Localities—Nikko, Tosa, Niigata.
Time of appearance—June to July.

This is a mountain insect, and the male is not uncommon. The female is decidedly rare, and is somewhat larger than the male.

62. **Apatura ilia, Schiff.** (Pl. 5, fig. 9.)

Var. *clytie, Schiff. A. here*, Feld.
A. substituta, But.

Localities—Tokyo, Asama-yama, Ô-yama.
Food-plant—Salix.
Time of appearance—July to September.

This most beautiful butterfly is very capricious, and, although not uncommon in Tokyo, is almost unknown in Yokohama. It delights in flying round the tops of tall willow trees, now and again descending to moist spots in the roadway or settling on the leaves of its favourite tree. The green *pupa* mimics a young willow leaf, both in shape and color. It varies greatly in intensity of color according to locality, and is more abundant on the mountains than in the plains.

63. **Euripus charonda, Hew.** (Pl. 5, fig. 6.)

Localities—Yokohama, Chichibu, Yamato.
Time of appearance.—July.

This grand insect is not uncommon, but is very difficult to obtain *perfect*. I have often seen several dozens in a day without being able to secure a single specimen. It is quite fearless, and the male has a favourite stand, often on the summit of a tall tree, from which it sallies forth and attacks any passing bird or insect, returning to its perch after it has chased the intruder away. Almost the only way to obtain it is to find an oak or chesnut which has been attacked by the boring *Cossus* or *Hepialus*, the fomenting sap from their burrows being very attractive to it. Each individual generally has its favourite tree to which it descends to suck the flowing sap and fight the other insects which also crowd such attractive spots. Within the space of a few feet on the bole of a tree it may often be seen in company with two or three enormous Hornets and a crowd of *Lethe sicelis*, Stag, and other Beetles, which it buffets with

its wings until its imperial claims are acknowledged. If capture be missed the first time patience is needed as it will in the course of an hour or so surely return. It has a very large flat *pupa*, of a beautiful light green color. I have had many broods of eggs, and have tried the newly hatched *larvæ* with every possible tree, but could never induce them to feed.

64. **Euripus japonica, Feld.** (Pl. 5, fig. 8.)

Locality—Yokohama.
Food-plant—Celtis sinensis, Pers.
Time of appearance—June, August, October.

This insect appears twice in the year, and may often be seen flying round trees, especially Celtis, on which it feeds. Like *E. charonda*, it is very fond of frequenting the mouths of the burrows of *Cossus* and other destructive internal feeding Lepidoptera and Coleoptera which so commonly attack the oak, chesnut, and willow trees in this country. The *larva* hybernates on the bark of the twigs of the tree, and is then grey, but as soon as the leaves appear in the spring it changes its skin and becomes green. It is of the usual *Apatura* tapering cylindrical shape, with strongly bifurcated head.

65. **Limenitis populi, Linn.** (Pl. 5, fig. 7.)

Locality—Yezo.

During the year 1882 my collector took several specimens in the Island of Yezo. I have not seen it since from any other locality.

66. **Limenitis sibylla, Linn.** (Pl. 5, fig. 15.)

Localities—Yokohama, Fuji-san, Nikko.
Food-plant—Lonicera japonica, Thun.
Time of appearance—June, August.

This species varies considerably in size and in the white markings of the upper side.

67. **Cyrestis thyodamas, Boisd.** (Pl. 5, fig. 14.)

Localities—Yamato, Satsuma.
Time of appearance—August.

In the year 1876, while descending the mountain Omine-san-jo, towards Kashiwagi, I was much surprised to see a solitary specimen of this species, which, with some difficulty, I secured. Last year my collector again saw this species, with which he is well acquainted, at Kagoshima, but unfortunately did not effect its capture. South of Japan, in the Ryukyu Islands, it is not uncommon.

68. **Neptis aceris, Lep.** (Pl. 6, fig. 1.)

N. intermedia, W. B. Pryer.

Localities—Yokohama, Nikko, Asama-yama.
Time of appearance—June, August.

This is the most abundant species of the group, and may often be seen gracefully sailing along with out-stretched wings in places where the sun does not strike too powerfully. Japanese specimens of this species can be generally recognized from those of the tropics by being darker-coloured on the underside.

69. **Neptis excellens, But.** (Pl. 6, fig. 2.)

Localities—Nikko, Asama-yama, Fuji-san, Yezo.
Time of appearance—July.

This is a rarity, and I have only seen single specimens from each of the above named localities.

70. **Neptis pryeri, But.** (Pl. 6, fig. 3.)

Localities—Fuji-san, Asama-yama, Nikko.
Time of appearance—July.

This is a mountain species, but this year I was somewhat surprised to see a solitary example in the neighbourhood of Yokohama.

71. **Neptis alwina, Brem and Grey.** (Pl. 6, fig. 4.)

Localities—Nikko, Asama-yama, Niigata.
Time of appearance—July.

This is the largest of the family, and is not uncommon in the mountains.

72. **Neptis lucilla, Schiff.** (Pl. 6, fig. 5.)

N. ludmilla, Herr.—Schäff.

Localties—Nikko, Asama-yama, Yezo.
Time of appearance—July.

The specimen from which the figure is drawn is from Yezo and has a greater amount of white than is usual with those from the South.

73. **Vanessa levana, Linn.** (Pl. 5, fig. 12.)

Localties—Nikko, Tosa, Yezo.
Time of appearance.—July.

This species is very variable in size, shape, color, and markings. Some specimens are black marked with white, others with both white and red. It has two or more broods in the course of year. In habits, marking, and flight, it resembles a *Limenitis*.

74. **Vanessa burejana, Brem.** (Pl. 5, fig. 11.)

V. strigosa, But.

Localities—Nikko, Yezo.
Time of appearance—May.

The remarks concerning the preceding species apply also to this; it is very variable in size, shape, colour, and markings. I have specimens from $1\frac{3}{5}$ to $1\frac{7}{10}$ inch.

75. **Vanessa c-album, Linn.** (Pl. 6, fig. 6A., 6B.)

V. fentoni, But.
V. hamigera, But.

Localities—Nikko, Asamayama, Yezo.
Time of appearance—August.

Very variable in shape, markings, and in the colour of the underside. I have a series of 21 specimens, no two of which are alike. The coloration of the underside varies from black to red. Some specimens resemble the autumn brood of *V. c-aureum*, Linn.

76. **Vanessa v-album, Hübn.?** (Pl. 6, fig. 9.)

V. l-album, Esp.

Localities—Nikko, Yezo.
Time of appearance—August.

I am rather doubtful about the name of this insect. In Mr. Elwes' list of the Butterflies of Amurland, North-China, and Japan (Proc. of the Zoo. Soc. Nov. 15, 1881), the following note is given on *V. l-album*. "Only seen from the Ussuri and from Japan, where it seems rare. The Japanese insect seems intermediate between the European and the American form known as *V. j-album*; but probably the latter is not really separable. Mr. Strecker says that the European and American forms cannot be separated."

77. **Vanessa c-aureum, Linn.** (Pl. 6, fig. 7A, 7B.)

V. angelica, Cr.
V. pryeri, Janson.

Localities—Yokohama, Yezo.
Food-plants—Hemp (Cannabis sativa, L.) and Wild Hop (Humulus japonicus, S. & Z.).
Time of appearance—

This species varies considerably according to temperature. *V. angelica* is the summer form, *V. pryeri* the winter form, which hybernates.

78. **Vanessa xanthomelas, Schiff.** (Pl. 6, fig. 10.)

Locality—Yokohama.
Food-plants—Willows and Celtis sinensis, Pers.
Time of appearance—August to April.

Very abundant about Yokohama. It feeds on Willows, but is more often found on the Celtis, large trees being frequently completely stripped of leaves by the *larvæ*. Only one brood appears during the year, and the perfect insect hybernates.

79. **Vanessa urticæ, Linn.** (Pl. 6, fig. 8.)

V. butleri, Fenton.

Locality—Yezo.
Time of appearance—

This species is common in Yezo; I have not yet found it on the main island.

80. **Vanessa io, Linn.** (Pl. 6, fig. 11.)

Localities—Yezo, Niigata Nikko, Usui-toge.
Time of appearance—June, July.

Mr. J. M. Leech remarks concerning this species (P.Z.S. 1887, p. 241): "Not very common in Central Japan, where it keeps to the mountains, but plentiful in Yesso and Korea."

81. **Vanessa antiopa, Linn.** (Pl. 7, fig. 1.)

Localities—Nikko, Yezo.
Time of appearance—August to May.

Common at Nikko and in Yezo; not found away from the mountains.

82. **Vanessa cardui, Linn.** (Pl. 7, fig. 2.)

Localities—Yokohama, Maibashi, Yezo.
Food-plant—Plume thistles (Cnicus).
Time of appearance—August, Septembr, November.

Rare in the neighbourhood of Yokohama.

83. **Vanessa callirhoë, Fab.** (Pl. 7, fig. 3.)

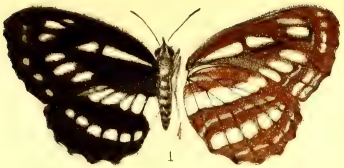
Papilio atalanta indica, Herbst.

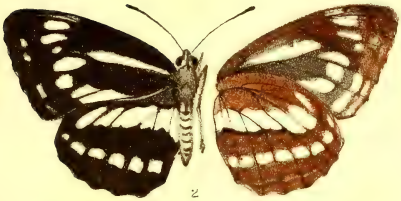
Localities—Yokohama, Yezo.
Food-plant—Bœhmeria nivea, Hook and Arn.
Time of appearance—January, March, August, November.

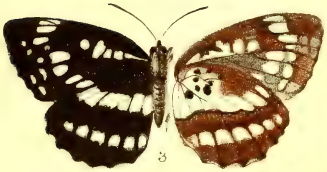
Many broods appear in the course of the year. I have had them emerge from the *pupa* in January. It is very common about Yokohama.

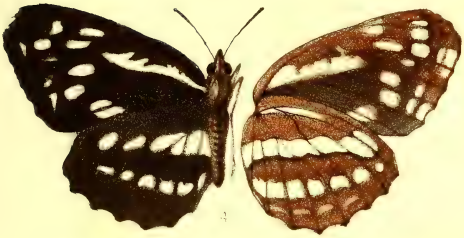
1A
1B
2
3
4
5
6A
6B
7A
7B
7C
7D
8A
8B
9A
9B
10
11
12
13
14
15
16
17
18
19
20
21
22
23A
23B
24A
24B
24C
25A
25B

1A
1B
1C
2
3A
3B
4A
4B
5
6
7
8
9
10
11
12
13
14
15
16


1

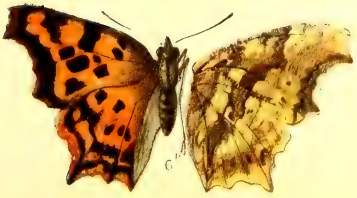

2


3

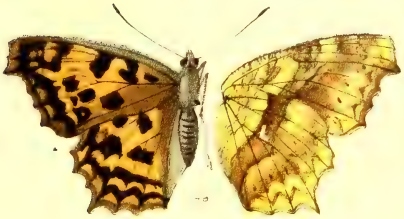

4

5

6

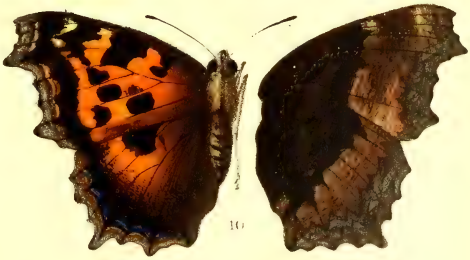

7

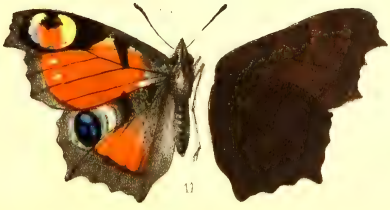
8


9

10

11


12


13

ル說ヲ記載セリ（日本中央ノ山國ニハ甚ダ普ヲカラスト雖北海道及朝鮮ニハ夥多ナリ）ト

(一一八) ヴァヲサ、アンチヲパ、リン（第七版第壹圖）

産地　日光、北海道

期節　八月、五月

日光北海道ニ夥多ナレ𪜈常ニ山上ニノミ之ヲ發見ス

(一二八) ヴァヲサ、カルヂユイ、リン（第七版第二圖）

産地　横濱、前橋、北海道

食草　蒴（ヤブマヲ）

期節　八月、九月、十一月、

横濱近傍ニ稀ナリ

(三八) ヴァヲサ、カリレー、フアブ（第七版第三圖）

パピリヲ、アタランター、インヂカ、ヘルブスト

産地　横濱、北海道

食草　苧麻（マヲ）

期節　一月、三月、八月、十一月

候ニ由テ數多孵化發生ス余ハ一月ニ蛹ヨリ啓發セルモノヲ所有ス横濱四隣頗ル多シ

期節

此種ハ季候ニ從ヒ變化ヲナスヿ著シ「ヴア、アンゲリカ」ハ夏季ノ形種ニシテ「ヴア、プライエリ」ハ冬季ノ形種ナリ此種ハ冬眠ヲナス

(九七) ヴァチサ、ザンソメラス、シッフ、（第六版第十圖）

產地　橫濱、

食草　楊柳及朴樹

期節　八月ヨリ四月ニ至ル

橫濱四近頗ル夥多ナリ楊柳ヲ食餌トナス然ドモ時ニ又朴樹上ニ之ヲ採見スルヿアリ而シテ此蝎ノ爲メニ大樹ノ兀然タルヿ往々之アリ但年一回生殖シ而シテ成蟲ハ冬眠ヲナス

(九七) ヴァチサ、アルチシー、リン（第六版第十一圖）

バットレリ、フエントン

產地　北海道

期節

此種ハ北海道ニ普通ナレドモ本道（メイアーランド）ニ於テ發見セス

(〇八) ヴァチサ、イヲ、リン（第六第十一圖）

產地　北海道、新潟、日光、碓井峠

期節　六月七月

ジエー、エム、リーチ氏ハ千八百八十七年刊行ノ動物學協會雜誌二百四十一葉ニ此種ニ係

外貌斑文及裏面ノ彩色ニ甚タ差異アリ余廿一ノ標品ヲ集メテ之ヲ通覽スルニ一トシテ相同シキモノナシ裏面ノ彩色ハ黑色ヨリ赤色ニ變スルアリ某標品ハ「ヴァ、レーアリユム、リン」ノ秋種ニ類似ス

(六七) ヴァ子サ、ヴキーアルブム、ヒユプ子ル？（第六版第九圖）

エルーアルブム、エスペンシヤイ

產地　日光、北海道

期節　八月

此種ノ名稱ニ就テハ少シク疑ヒナキ能ハズ（千八百八十一年十一月十五日刊行ノ動物學協會雜誌）ニ揭載セルエルウエス氏ノアムアランド北支那及日本蝶類目錄ニ據レハ「ヴァ、エルーアルブム」ニ就テ左ノ記載アリ（特ニウスリ及日本ニ於テ之ヲ視察ス然ルニ該地ニハ稀ナラン日本種ハ「ヴァ、ジエーアルブム」トシテ知ラレタル歐羅巴及亞米利加形種ノ間ニ在ルモノヽ如シ而メ「ジエアルブム」ハ蓋シ眞ニ區別スベキモノニアラザルベシフトレックル氏ハ歐羅巴及亞米利加形種ハ區別スル能ハザルコヲ陳述ス）

(七七) ヴァ子サ、シ！ヲリユム、リン、（第六版第七圖AB）

アンゲリカ、クラマ

プライエリー、ジヤンソン

產地　橫濱、北海道

食草　大麻及葎草（カナムグラ）

抜ニ圖スル所ノ標品ハ北海道ノ產ニシテ南方尋常ノ標品ヨリ寧ロ白色ノ多分ヲ占ム

(三七) ヴァヲサ、レバナ、リン（第五版第十二圖）

產地　日光、土佐、北海道

期節　七月

此種ハ其大サ外觀、彩色、及斑文ニ頗ル差異アリ某者ハ黑色ニ白斑アリ他者ハ紅白ノ二色ヲ帶ブ四時ノ運行ニ由テ二回或ハ三回ノ生殖ヲナス其慣性、斑文、及飛翔ノ狀ニ於テ「リメニチス」ニ髣髴タリ

(四七) ヴァヲサプレシヤナ、ブレーム（第五版第十一圖）

ストリゴッサ、バツト

產地　日光、北海道

期節　五月

前種ニ係ル所ノ標徵ハ亦此種ニ適應ス其大サ外觀、彩色、及斑文ニ甚タ差異アリ余ハ一インチ五分ノ二ヨリ一インチ十分ノ七マテノ標品ヲ有ス

(五七) ヴァヲサ、シーアルブム、リン（第六版第六圖A B）

フェントニー、バツト

ハミゲラ、バツト

產地　日光、淺間山、北海道

期節　八月

ヲ視察スルヲ屢ナリ日本ニ産スル種ハ一般ニ裏面ニ暗色ヲ帶ブルヲ以テ熱帶ノ種ト識別スルヲ得ルナリ

(九六) チブチス、エキスセルレンス、ハット（第六版第二圖）

産地　日光、淺間山、富士山、北海道

期節　七月

此種ハ稀レニシテ余ハ右ニ記スル地方ヨリ各々一品ヲ得ルノミナリキ

(一〇七) チブチス、プライエリー、バット（第六版第三圖）

産地　富士山、淺間山、日光、

期節　七月

此種ハ山中ニノミ産ス然ルニ今年横濱近傍ニ於テ唯一箇ヲ視稍ヤ一驚ヲ喫セリ

(一一七) チブチス、アルウイナ、ブレーム及クレイ（第六版第四圖）

産地　淺間山、新潟、日光

期節　七月

此種ハ族中最大ノモノニシテ山上ニ稀ナラズ

(一二七) チブチス、ジシラ、シッフ（第六版第五圖）

ルドミラ、ヘルーシエフ

産地　日光、淺間山、北海道

期節　七月

千八百八十二年余ノ採集者カ北海道ニ於テ數多ノ標品ヲ蒐集セシカ爾來他ノ地方ニ於テ之ヲ視察セザリキ

(六六)リメニチス、シピルラ、リン（第五版第十五圖）

産地　横濱、富士山、日光

食草　忍冬（ニンドウ）

期節　六月八月

此種ハ其大サ並ニ翅ノ表面ニ呈セル白色ノ斑文ニ著シキ差異アリ

(六七)チレスチス、セイヲダマス、ボイスト（第五版第十四圖）

産地　大和、薩摩、

期節　八月

千八百七十六年余ハ大峯山上ヨリ柏木村ニ降ル際多少ノ困難ヲ經テ之ヲ捕獲シ其種ノ秀逸ナル標品タルコヲ視察シ頗ル驚駭セリ又昨年余ノ採集者ハ此種ヲ鹿兒島ニ於テ日視シタレ𪜈不幸ニシテ捕獲シ得ザリキ日本ノ南部及琉球島ニ於テハ稀ナラザルナリ

(六八)チブチス、アセリス、レブ

インテルメヂア、タブリユー、ヒー、ブジイエル

産地　横濱、日光、淺間山

期節　六月、八月

種屬中最モ夥多ナル種ニシテ日光ノ酷シカラザル場所ニ翅ヲ展張シテ徐ロニ飛翔スル

「ヘピアルス」ノ爲メニ蝕セラレタル樹樹或ハ葉ニ就テ其蟲孔ニ液精アルヲ視ルベシ乃此液ハ蝶ヲ誘引スルニ頗ル適當ノモノニメ毎種一般ニ其好ム所ノ樹アリテ其流溢セル液汁ヲ吸呪センタメニ時々其所ニ降リ來ル而メ此誘引所ハ地ノ蟲類モ亦聚合スルヲ以テ彼カ爰ニ恰好ノ位地ヲ占有スルマデ其翅ヲ振搖スルヲ視察セラルベシ若シ最初ニ捕獲ヲ誤ルトモ暫ク其所ニ待ツヤハ必ス復歸リ來ルベキナリ其蛹ハ甚タ大且扁平ニシテ鮮明ナル綠色ヲ帶ビテ美ナリ余數多ノ卵ヲ得タリ因テ其新タニ啓發シタル妙ニ種々ノ樹葉ヲ與ヘテ飼育ヲ試ミタレ𪜈終ニ飼付カザリキ

(四六)ユリバス、ジヤポニカ、フエルダ（第五版第八圖）

產地　横濱、

食草　朴樹（エノキ）

期節　六月八月十月

此種ハ年ニ二回現出ス樹ノ周圍ニ飛翔スルヲ視察スルヿ屢々ニメ殊ニ其食餌トナス朴樹ニ多シ「ユ、カロンダ」ノ如ク「コスサス」其他ノ鱗翅類及甲蟲類ノ爲メニ蝕セラレタル樹樹、栗、柳、等ノ蟲孔ニ於テ常ニ發見セラル此蝎ハ樹梢ノ皮裏ニ冬眠チナスヲ以テ當時ハ鼠色チ帶ヒルト雖春候萌芽ヲ生スルヤ其皮忽チ變シテ綠色チ呈ス其形狀通常ノ「アバチユラ」ノ如ク光リタル圓筒形ニシテ分岐セル頭ヲ具フ

(五六)リメニチス、ポプリー、リン（第五版第十五圖）

產地　北海道

此種ハ常ニ山上ニ在リ雄ハ夥多ナレ𪜈雌ハ極メテ稀少ニシテ多少雄ヨリ大ナリ

（二六）アパチユラ、イリア、シップ（第五版第九圖）

パール、クリチイ、シップフ、ヘレ、フユルト

サプスチ、ユタ、パツト

産地　東京、淺間山、大山

食草　柳

期節　七月ヨリ九月ニ至ル

此蝶ハ頗ル美麗ニシテ甚タ變化シ易シ東京ニ於テハ珍シカラザレ𪜈横濱ニ於ラノ𪜈ル コ幾稀ナリ性甚輕擧ニシテ或ハ高ク楊柳ノ梢上ニ飛翔シ或ハ皐ク路上ノ濕地ニ降リ或ハ所好ノ樹葉ニ停止ス又其蛹ハ緑色ニシテ容姿色澤共ニ楊柳ノ嫩葉ニ髣髴ス產地ニ因テ色ノ光澤ニ甚タ差異アリ此種ハ平野ヨリ山上ニ稍ゝ夥多ナリ

（三六）ユリパス、カロンダヒユー（第五版第六圖）

産地　横濱、秩父、大和、

期節　七月

此大ナル種ハ稍ナラザレ𪜈完全ノモノヲ獲ルコハ甚タ難事ニシテ余ハ終日之ヲ目擊スル數十種ナルモ未タ其一ヲモ捕ルコ能ハザリキ性頗ル勇敢ニシテ雄ハ往々喬木ノ頂上ニ恰好ノ地ヲ占メ鳥若クハ蟲ノ其傍ヲ過クルアレバ突出シテ之ヲ追趁シ暫クシテ之ヲ見捨ツルヤハ再ヒ舊所ニ復スルナリ之ヲ捕獲スルニ殆ド唯一法アルノミ「コスサス」又ハ

ン七月ニ至リ「ペセスパ」形種ニ孚化スル所ノ卵子ヲ放產ス此二種ノ形種ニ關シ最モ裨益アル問題ノ說明ニ猶不充分ノ所アリト雖モ余ハ鱗翅類中ニ比類ナカラントト認ム然モ此未曾有ナル變化ノ成績ニ就テハ其如何ナル理由ノ在ルヤ有リテ存スル所ヲ知ラス

レモニアイデー族

(ろ)リピセア、レピタ、ムアー（第五版第十三圖）

產地　横濱、日光、北海道

食草　朴樹（ゴノキ）

期節　七月ヨリ五月マデ

此蝶ノ生殖ハ唯一回ニシテ其成蟲ノ長命ナル鱗翅類中ニ冠タリ七月ニ蛹ヨリ啓發シ翌年五月マデ生存ス其啓發以降直ニ蟄伏シテ冬眠ヲナシ來年三月マデ靜息シ而メ早春暖日ニ蔓起シ朴樹ノ森林ニ放卵スルヲ視察ス其蛹ハ「ヴアチサ」ノ蛹ノ如ク尾部ヲ以テ懸垂セリ成蟲ハ其斑文並大サニ著シキ差異アリ

ニムフアリデ族

(一六)ヂコルラシア、チシマキユス、ボイフト（第五版第十圖）

產地　日光、土佐、新潟

期節　六月、七月

ペセスパ、ジヤンソン（第二版第十一圖）

レニタ、ボイスト（第二版第十圖）

前編十葉ニ記載シテ之ヲ刊行シタル後余ハ岐阜ノ名和氏ト交ヲ結ヒ頗ル裨益ヲ得甚タ緊要ナル發明ヲ爲セリ即チ此「テリアス、ペセスパ」ハ夏季ノ形種ニシテ「テリアス、レエタ」ハ冬季ノ形種ナルコヲ撿出セリ此事タル全ク意外ニシテ名和氏ト倶ニ「ラ、ペセスパ」ノ雌カ山扁豆（カハナフヅメイ）ニ放卵スルヲ視察シ其卵ヲ採リテ之ヲ孚化發育セシメ「テ、レエタ」ノ標品數多ヲ得タリ然ルニ其中ニハ親ノ「テ、ペセスパ」ノ形種ニ少シモ類似セルモノコレナシ然ルニ「ペセスパ」ノ卵ヨリ「テ、ムルチホルミス」ノ「ヘカベ」ノ形種ニ甚タ相似タル標品ヲ飼育セリ蓋シ此モノハ雜種ナラン「ラ、レエタ」ノ翅ノ外形ハ尖リテ「ペセスパ」ノ外形ハ圓シ而シテ「レエタ」ハ「ペセスパ」ヨリ尚ホ大ナリ余ハ此等ノ二形種ヲ結合シテ「テリアス、バイホルミス」ト名ケント欲ス「テ、レエタ」ノ形種ハ蛹タルコ唯七日ニシテ羽化シ而テ生息スル八ケ月此世代中四ケ月ヨリ五ケ月マテ冬眠ヲナス前編十葉ニ余ハ「レエタ」ハ三月ヨリ十一月マテ顯ハルヽコヲ說ケトモ今其說ノ誤レルヲ知ル而テ前說ニ反スルノ眞ニ近キヲ知レリ此種ハ年末ノ十一月十二月ニ顯ハレテ冬眠チナシ三月始テ覺起スル此生活上ノ來歷ヲ知ラサリシカ爲メ余ハ「レエタ」ノ蝎カ三月ヨリ十一月マテ生活スルノ誤說チ逃ルニ至リシナリ「レエタ」形種ハ八月ニ於ニ「ペセスパ」形種ノ放卵シタル卵子ヨリ啓發シタル蝎カ非常ニ些少ノ日子チ以テ其發育變化ヲ完了シ九月ノ初旬或ハ稀レニ八月ノ下旬ニ羽化シテ顯出ス「レエタ」ハ十一月前ニ冬眠チ始メスシテ冬月中睡眠ヲ爲シ三月春暖ノ日ニ覺起シ五月マテ飛翔

ナス樹木ハ唯春候新葉ヲ生スルノミ然ルニ雜艸及蔓草ハ早春ヨリ晩秋ニ至ルマテ生長ス故ニ樹葉ヲ食スル者ハ其發育ノ際ニ取ル可キ食餌ヲ年ニ一回得ルノミト雖モ雜草等ヲ食スル者ハ三月ヨリ十月マテ之ヲ得ルヲ以テ其生殖夥多ナリ然ルニ此法則ハ堅翅ヲ具ヘテ而メ年々唯一回現ハル、他ノ屬ニ應用スルヲ能ハス其唯一回生殖スル事實ハ他ニ事情ノ存スルアルヲ以テナリ即チ蝙蝠、蜘蛛、蜻蛉等ノ如キ余カ所謂恒敵者ノ爲メニ捕獲セラルヘキ成蟲ノ搆造、彩色、慣習、是ナリ仮令ハ冬季羽化シ其月ニ放卵スル「ハイペルニア」族ノ如キ其卵速ニ孵化シテ蠖トナリ食ヲ採ル暫時ニシテ蛹ニ變シ其儘夏秋ヲ經過シ來冬ニ至ル余ハ此理由ノ明瞭ナルヲ信ス如何トナレハ凡テ「ハイペルニア」族ノ雌ハ無翅或ハ唯飛翔シ得サル翅ヲ具ヘ雄ハ甚タ異常ニ發達シタル翅ヲ具フルヲ以テ多少遁逃ニ遲鈍ナリ是等ノ爲メニ他ノ犧牲トナルコヲ免ル、能ハスシテ晝ハ蜻蛉ノ呑噬ヲ蒙リ夜ハ蜘蛛ノ網ニ罹ル故ニ此等ノ警敵ノ暫伏スル寒冷ノ時季ニ際シ兮化シテ成蟲トナルコヲ發見セリ又「テニヲカムパー」ハ強健ナル蛾ニシテ唯春季ニ發生ス此蛾ハ樹ニ接近シテ翅ヲ振搖スルノ慣習アリ若シ彼レノ發生遲延シテ蜘蛛ノ網ハ樹林ニ滿チ蝙蝠ハ旦夕ニ群飛スルノ時季ニ發生セハ忽チ絶滅セラルヘシ斯ノ如ク蟲ノ來歷ニ注意シテ研究スルトキハ其一回或ハ二回發生スルノ理由ヲ詳細ニ判定シ得可キヲ信ス

ピリーデ族（前編十葉ニ接續ス）

テリアス、バイホルミス、エイチ、フライヤ

セクラ、ジヤポニカ

セクラ、オリエンターリス

セクラ、スマラクヂナ

種類ニ由テ右ノ各綱ニ倣ハサルモノアリ「セクラ、ジヤポニカ」ノ多變形種ノ雌ニ於テハ或ハ輝色アリ或ハ暗色アリ又季候形種即チ「ポリチムマタス、フリーアム」ノ雄ノ如キハ夏季殆ト黒色トナリ北海道ノ「ライシイナ、ユフエマス」ハ殊ニ雄ニ於テ光澤アルヲ見ル

(一)(一)(一)

其第二ノ特性モ記スヘキ價アリ翅ノ表裏面ニ驚クヘキ相違ヲ呈スルノ一事ニシテ其差違ハ生活上讐敵ノ捕撃ヲ防禦スルニ頗ル肝要ノ具ナリ余屢蜻蛉ノ此藍蝶ヲ捕獲ス可ク追究スルヲ視察スト雖未タ之ヲ捕ヘシモノヲ見ス此蝶ノ飛翔スル際之ヲ遠望スルヤハ宛モ唯藍色ノ物質ガ種々ノ運動ヲ爲ス如シ然ルニ仔細ニ之ヲ靜視セハ乃チ此蝶ノ迅速ニ群翔シテ灰白色及藍色(或ハ雌ノ茶褐色)ヲ交呈スル而テ蜻蛉ノ追撃劇シケレハ蝶ハ翅ヲ收メテ新裝ヲ呈スルヲ以テ追究者ハ終ニ見捨ツルニ至ル

第三ノ特性ハ一年間ニ某種ハ一回他ノ種ハ數回ノ生殖ヲ爲スノ一事ナリ前表ニ於テ一年ニ唯一回現ハルヽ種ニ對シテハ(一)ノ符號ヲ附シ數回現ハルヽモノニハ(二)ノ符號ヲ附セリ(?)ノ符號ハ未タ詳カナラザルモノナリ余ハ右ノ表ニ付テ次ノ結果ヲ得タリ即チ一年一回現ハルヽ所ノ種ハ孰レモ樹葉ヲ食ヒ數回現ハルヽモノハ雜草若クハ蔓草ヲ食ス此種ノ蝶ニ就テ其体ノ構造並慣習ヲ研究スルニ余ハ其蝶ノ運動甚タ遲鈍ニシテ且一般ニ頭部頗ル細微ニ頸軟弱ニシテ唯嫩葉ヲ蠶食スルニ勝ユルヲ發見セリ而テ食餌ト

セクラ、エンセア (一)
セクラ、ダプリウアルバム (一)
セクラ、プルニイ (一)
セクラ、メラ (一)
セクラ、イバラ (一)
セクラ、パットレリー (一)

〔二〕雄僅ニ彩色アリ雄暗色

ニファンダー、ファスカ (?)
ライシイナ、ユフヒマス (?)

〔三〕雄輝雌暗色

キユレチス、アキユタ (一)
ライシイナ、アルヂアデス (一)
ライシイナ、アルヂア (二)
ライシイナ、アルグス (二)
ライシイナ、イーゴン (?)
ライシイナ、イバリエンシス (?)

〔四〕雄甚タ光輝雌暗色

セクラ、サフアリナ (一)
ライシイナ、ライコルマス (?)
ライシイナ、ピーチカ (二)

〔六〕雌輝雄ニ優ル

ライシイナ、プライエリー (一)

〔七〕雌雄殆ト全色

ライシイナ、チガサワラエンシス (?)
アムプリポヂア、ジヤポニカ (一)
アムプリポヂア、タルバタ (?)
アムプリポヂア、ルーミサイ (?)
セクラ、シクナタ (?)
セクラ、アラタ (一)

セクラ、フリバルヅキー (一)

ポリヲムマタス、フリーアス (二)

〔八〕雌雄共ニ佳麗

ヂプサス、シーペストリアタ (一)
ヂプサス、ルテア (一)
ヂプサス、ジヨナシー (一)

期節　三月及六月

此種ハ日本産ライシニデイ族ノ藍色ナル類中最美麗ナルモノナリ該種ハ他ノ種ニ似ス年ニ唯一回現出ス

(八五) ライシィナ、ユフェマス　エチヒ　カザモトドルウス　(第五版第四圖A B)

産地　富士山、日光、淺間山、北海道

期節　八月

此種ハ山中ニ産シ且甚タ變化アリ某ノ標品ハ全ク茶褐色ニシテ他ハ濃厚ノ藍色ヲ呈ス

(八六) ライシィナ、イパリエンシス、パット　(第五版第五圖)

産地　南部、淺間山

余ハ南部産ノ甚タ損傷セル標品二箇及淺間山産ノ佳品一箇ヲ有ス

「ライシニデイ」族ニ關スル甚タ面白キ點ヲ玆ニ記載スベシ

第一ニ類中諸種ノ雌雄ノ色澤ニ著シキ差等アル是ナリ余ハ此事實ヲ詳明センガ爲メ左綱ノ下ニ表ヲ掲クベシ

〔一〕雌雄共ニ暗色ナリ

ミレタス、ハマダ　(一)(二)

セクラ、アチリア

〔五〕雄輝雌亦輝ニシテ小差アリ

セクラ、ヲルセヂス　(?)(二)

ライシィナ、アルヂヲラス

如ク殆ト暗色ニシテ綠色ノ鱗アリ前後兩翅ノ起部及外緣ニ沿フテ疎ニ散見ス雌ヲエチ、ジエ、スノー氏ノ採集ニ係ル千島產ノ損傷セル標品ヲ得タリ余ハ此種ニ屬スルモノト信ス余淺間山ニ於テ二三百フィートヲ登ル間ニ三種ヲ觀察セリ皆單純ノ標品タルヲハ明白ナリト雖數多ノ標品ヲ調査シテ此等ノ全ク一種ニ歸スルヲ斷定セリ

(四五) ライシイナ、イゴン、ミッフ (第五版第二圖)

ミクフルガス、パット

余ハ本道(インファート)ノ北部ヨリ得タル標品一箇ヲ有ス

(五五) ライシイナ、アルジヲラス、リン (第四版第廿五圖AB)

產地　橫濱

則節　春及夏

此蝶ノ種子ニハ異樣アリ雄ハ常ニ變セザレ共雌ニハ二箇ノ甚タ遠ヘル季候形種アリ一ハ表面ニ黑色ヲ帶ヒ他ハ概テ後期ニ現出シ甚タ鮮色アリ第二ニ孵化シタルモノハ往々雨形種ヲ兼備シテ現出ス

(五六) ライシイナ、ライコルマス、パット (第五版第三圖AB)

產地　北海道

此種ハ特ニ北海道ニ產シ本地ニ夥多ナリ某ル雄ハ殆ト雌ノ如ク黑色ナリ

(五七) ライシイナ、プライエリ、モーレイ (第五版第十六圖)

產地　橫濱、北海道

ヘロナア、メン

産地　横濱

期節　三月ヨリ十月

此種ハ甚タ夥多ニシテ期年中ニ孚化發生ス但シ其大サニ頗ル差等アリ又其雌ハ往々表面ニ多少ノ藍色ヲ呈ス

（二五）ライシイナ、アルシア、メン（第四版第廿四圖AB）

シヤポニカ、モーレー（第四版第廿四圖C）

産地　横濱

期節　三月ヨリ十一月

余ハモーレイ氏ノ命名シタル種名ヲ廢斥スルコトニ於テ敢テ躊躇セザルナリ余ハ未タ「ラ、アルシア」又ハ「ラ、シヤポニカ」ヲ飼育スルヲ得ザリキ且其食草ヲ知ラズト雖此種ハ最モ夥多ナリ余カ之ヲ一種ニ結合セル所以ハ「ラ、シヤポニカ」ハ唯春秋ノミニ現出シ「ラ、アルシア」ハ其中間ノ夏季ニ於テ現出スルノ事實アルニ因レハナリ

（二五）ライシイナ、アルガス、リン（第五版第一圖ABC）

産地　富士山、日光、淺間山、千島（？）

期節　八月

日本ニ於テハ産地ニ因リ頗ル變化スル蝶ニシテ或ハ藍色或ハ鳶色或ハ藍色ニ綠色ヲ帶フルアリテ其形狀一樣ナラズ而テ此最尾ノ形種ハ頗ル有益ノモノニシテ雄ハ常ニ雌ノ

黒色トナリ而テ十一月最後ノ生殖期マテ繼續ス然ルニ二十哩ノ差甲地ニハ小形ニシテ彩色鮮明ノ雄ヲ產シ乙地ニハ暗黒ノ雄ヲ現出スルヲ證明スルニ足ル某年十一月余横濱近傍ニ於テ前種ノ雄ヲ採集シ其次ノ日横濱ヨリ二十哩以上ヲ隔テザル房州ニ於テ後種ノ雄ヲ獲タリ然ルニ房州ヨリ上總ヲ經テ北方ヘ旅行スルニ鹿野山ニ到ルマデ暗黒ノ形種ヲ見出スヿ尠ナカラスト雖此等ハ殆ト彩色鮮明ノ形種ニ復セントスルモノナリ

(〇五) ライシイナ、ピーチカ、リン（第四版第廿二圖）

產地　大和、小笠原島、横濱、琉球

食草　ファセオラス鵝豆

期節　三月（小笠原島）八九月（大和、琉球）十月（横濱）

此蝶ハ其散布脉極メテ廣ク余カ到ル所ノ東洋諸國ニ於テ之ヲ採集セリ「ブァン」島ニ多ク又小笠原島ニ產スル蓋シ何地ト雖其食草ヲ栽培スル諸島ニ於テ發見セラルベシ又歐羅巴ニ於テ觀察セラルル且英國ノ採集者カ頗ル貴重スル一種ニシテ「ブライトン」近傍南海岸ニ於テ二三ノ標品ヲ採集セラレシコトアリ故ニ若シ其食草ヲ適宜ノ地ニ栽培セラルヽ時ハ忽チ其地方ニ普キヲ信ス此種ハ一地方ニ限ラルヽモノト雖稀ニハ食草ヲ離レテ恣ニ飛翔スルコトアリ又其食草ヲ害スルコト甚シク啻ニ芽、葉、花、ノミナラズ莢實ニマテ孔ヲ開鑿ス横濱ニ於テハ特ニ年末ニ發生スル當時ハ恰モ其食草ノ結實スルヲ以テナリ然レ𪜈當地ニ於テハ之ヲ栽培スル夥多ナラサルヲ以テ從テ稀少ナリ

(一五) ライシイナ、アルシアデス、バル（第四版第廿三圖ＡＢ）

此種ハ北海道ニ甚タ多シ余カ有スル數品ハ悉ク皆其裏面ノ斑文ニ著シキ變化アリ

(八四) セクラ、フリバルツキー、レト（第四版第二十圖）

産地　横濱

期節　三月

此種ハ最モ早ク現出スル蝶ニシテ稀有ノ種類ニハアラザレ𪜈其慣性ニ關シテ常ニ採集者ノ輕忽ニ附セラルヽヲ免レズ其飛翔スルヤ甚タ迅速ニシテ常ニ喬木ノ枝ニ起居シ通例好ンテ靜止スル所ノ葉アリ若シ其邊ヲ經過スルモノ有レバ之ヲ追趕シツヽ倦怠スルマデ徘徊シ而テ復ヒ自己ノ居所ニ歸宿ス卵子ノ發生スルハ年ニ唯一回ナリ而テ此蝶ハ積雪ノ未タ消ヘザル時ニ於テ屢々視察セラル

(九四) ポリチムマタス、フリアス、リン（第四版第十一圖）

ヂチンシス、フエルト

エレンス、フアブ

産地　横濱

期節　三月ヨリ十一月

食草　スカンポ

此種ハ成蟲ノ羽化スル時期ニ由テ其大サ並彩色ニ著シキ變化アリ早春ノ種形ハ小ニシテ彩色鮮明ニ後翅ノ後緣ニ往々藍色ノ斑點羅列ス然ルニ温度ノ增加スルニ從ヒ其形チ大ニシテ且暗色ヲ帶ヒ遂ニ其大サ英國產標品ノ殆ド二倍ニ達ス暑中ハ雄ノ彩色往々眞

余ハ北海道ニ於テ余ノ採集者カ獲タル標品一箇ヲ所持シタリ

(三四) セクラ、メラ、ジヤンソン（第四版第十六圖）

産地　日光、淺間山

此種ハ暗色ニシテ且稍ヤ稀品ナリ

(四四) セクラ、ヲルセヴス、パツト

産地　日光、御嶽山

期節　七月

此種ハ其雌雄ノ彩色「ライシニデー」族中大ニ異リタル「ライシイナ、アルジチラス」ニ類似ス雄ハ鮮明ナル藍色ニシテ雌ハ藍色ニ黒キ緣アリ「ライシイナ、アルジヲラス」ハ（エイド）第十三編百零七頁ニ秀美ナル圖アリ抑此彩色ノ相類似スルハ甚タ奇異ニシテ此事實ハ昆蟲ノ同種屬中二箇ノ遠ク隔離セル種類ニ就テ其雌雄ノ粧飾ニ類似ノ照應アル例證ナリ

(五四) セクラ、イパラ、パツト（第四版第十八圖）

産地　日光

余ハ日光ヨリ一品ヲ得タリ此種ハ（エイド）第十四編百十參頁ニ美麗ナル圖アリ

(六四) セクラ、パツトレリ、フエント（第四版第十三圖）

産地　北海道

此種モ亦稀有ノモノニシテ余ハ唯一箇ノ標品ヲ北海道ヨリ得タルノミ

(七四) セクラ、シクナタ、パツト（第四版第十九圖）

（九三）セクラ、アチリア、ブレーム（第四版第十一圖）

産地　横濱、

期節　五月ヨリ七月

此種ハ横濱近傍最モ夥多ナリ翅ノ表裏ノ斑文ニ著シキ變化アリ標品中多クハ後翅ノ表面ニ灰白色ノ斑點ヲ呈セズ且裏面ノ斑文ニ著シキ差違アリ

（〇四）セクラ、エンセア、ジャンソン（第四版第十二圖）

産地　日光、北海道、淺間山

期節　七月

此種ハ日光ニ少カラズ又淺間山ニモ夥多ナリ

（一四）セクラ、ダブリューアルバム、ノック（第四版第十四圖）

ストライモン、フェントニー、バット

産地　北海道

此種ハ北海道ニ多シ且其大サニ著シキ變化アリバットラ氏ハ僥倖ニシテ稍ヤ大ナル標品ヲ得之ニ「ストライモン、フェントニー」ノ名ヲ命セリ（エイド）第十四編百十五版ニ其圖アリ余ハ該圖ニ符合スル「セクラ、ダブリューアルバム」ノ雌ノ標品數種ヲ有ス且其種ハ裏面ノ白色線ノ甚タ種々ナルコヲ發見ス

（二四）セクラ、ブルニー、リン（第四版第十五圖）

産地　北海道

ナリトセラレシハ既ニ紛亂セル種屬ニ猶一層ノ錯雜チ加フル而已ニシテ正當トハ認メ難シ「セクラ、オリエンタールリス」モ亦小形ニシテ翅ノ輪郭稍尖リ亦北方形種タルノ性ヲ具フレトモ足ルヲ知ラザル造種家ノ劫掠ヲ免レタリ「セクラ、ジヤポニカ」ノ雄ハ甚タ慓悍ニシテ好ンデ赤楊樹ノ葉上ニ停止シ競爭者ノ來ルヲ俟ツ「セクラ、スマラクヂナ」ニ就テ余ハ一說アリ這ハ恐クハ雜種ニアラサルナキ乎ト思考セシカ今僅ニ其然ラサルナキチ疑フニ至レリ然ルニ飼養術ニ由テ未タ此點ヲ實驗スルノ場合チ得ズ若シ此モノ眞ニ雜種ニアラザリセバ此種ト「セクラ、ジヤポニカ」ハ亦二樣形種ノ一例ナラン而テ「セクラ、オリエンタールリス」及「セ、ジヤポニカ」ハ橫濱ニ夥シト雖「セクラ、スマラクヂナ」ハ該地ニ於テ決シテ目擊セザルハ其雜種ニ非サル最眞ノ確證タリ此四種ノ雌ノ正形ハ祖先ノ暗色ヲ存ス併シセクラ、ジヤポニカ」ニ於テハ中ニ就キ北方形種ニ變形アリテ雄ノ呈スル綠色トハ全ク異ニシテ雌ハ藍色ヲ帶フルト雖其輝色ニ種々濃淡ノ差等アリテ存ス故ニ此終リノ種ハ明カニ變遷ノ階梯ナリトス「ザプサス」種屬ノ雌ハ雄ト均キ彩色ヲ具フ「セクラ、ジヤポニカ」ノ雌ノ如キモ造種家ハ此肝要ナル事實ヲ隱蔽セントシテ爲メニ妨害チナストト雖亦同一ノ順路ニヨルモノナリ

（八三）セクラ、アラタ、プレーム（第四版第十圖）

產地　日光、富士山、岐阜、北海道、

期節　五月ヨリ七月

此種ハ甚タ佳麗ニシテ常ニ山上ニ在リ雌雄共ニ殆ト均一ナリ

レヂナ、パットラ

産地　横濱、淺間山、日光、北海道

期節　平地ニテハ五月ヨリ七月ニ至リ山地ニテハ七月、八月

（六三）セクラ、オリエンタールリス、モーレイ（第四版第八圖AB）

産地　横濱、日光、淺間山、北海道

期節　前種ニ仝シ

（七三）セクラ、サフィリナ（第四版第九圖AB）

産地　北海道

此四種モ一ノ特殊ノ種屬ニシテ凡テ四種ノ雄ハ最モ鮮麗ナル虹彩ノ綠色ヲ呈シ「セクラ、オリエンタールリス」及「セクラ、サフヒリナ」ノ二種ノ雌ハ暗茶褐色ナリ「セクラ、スマヲグヂナ」ノ雌ハ余カ視シ所ノ凡テノ標品ニ於テハ前翅ニ帶黃茶褐色ノ斑点アリ然ルニ「セクラ、ジヤポニカ」ノ雌ハ多變形種ニシテ甚タ變化シ易シ而テ「セクラ、ジヤポニカ」ノ多變形種ハ仝ク茶褐色ニシテ第二ハ前翅ニ光輝アル藍色ノ大ナル斑點アリ第三ハ前翅ニ黃茶褐色ノ斑點アリ第四ハ藍色又ハ黃茶褐色ノ二斑點アリ而テ其變化ノ各階級ヲ混合セル標品ヲ屢〻發見スルコアリ故ニ雌ノ彩色ハ專ラ季候ノ寒暖ニ關シ北地或ハ高緯度ノ處ニ於テ獲タル標品ハ多クハ藍色ヲ呈スルヿ制規ノ如シパットラ氏ハ此理由ニ就テ北方形種ヲ別種

右ノ三種ハ日本産「ライシニデイ」族中尤モ美麗ニシテ且特別ノ種屬ナリ故ニ余ハ是等ヲ一括シテ論ズベシ「ザプサス、ルーデア」及「ザ、ジヨナシー」ニ於テハ判然二種ノ狀態ニシテ「ザプサス、ルーデア」ハ山上若クハ平野ノ兩所ニ發見セラルル然ドモ較〻山上ニ在ルヲ多シトス「ザプサス、ジヨナシー」ハ余ノ經驗ニ於テハ特ニ山上ニノミ栖息セル如シ之ニ反シテ「ザプサス、シーベストリアタ」ハ唯平地ニ於テ視察スルノミ且余ハ未ダ北海道ヨリ之ヲ獲ズ凡テ此三種ノ雌ハ其彩色甚ダ珍奇ニシテ日本産「ライシニデイ」族ノ通則ニ反シ殆ド全ク雄ノ彩色ヲ擅有セリ元來「ライシニデイ」族ノ雌雄共ニ暗色ナルハ祖先ヨリノ遺傳ニシテ雌ノ過半ハ此性質ヲ具ヘ雄ハ往々粲然タル彩色ヲ呈スルモノト知レリ然ルニ此種ニ於テハ雌雄共ニ其美麗ナル殆ト均一ニシテ唯雌ハ尚一般ニ黒色ナル翅ノ尖端ニ固有ノ暗色ノ形迹ヲ呈セルノミ渾テ此三種ハ日沒凡ソ二時間前ヨリ黄昏マテ最モ活潑ニ運動ス此時雄ハ概テ樹木ノ頂上ニ徘徊シ往々同時ニ三四回交尾シテ飛翔スルモノナリ

(四三) セクラ、スマラグヂナ、プレーム（第四版第六圖AB）

産地　日光、淺間山、北海道

期節　七月、八月

(五三) セクラ、ジヤポニカ、モーレー（第四版第七圖ABCD）

ファスシアタジヤンソン

(〇三) ニファンダー、ファスカプレーム及グレー（第四版第二圖）

ギスパー、プレーム

産地　日光、富士山

期節　六月、九月

此ニ揭クル圖ハ雌蝶ニシテ雄蝶ハ尙尖鋭ナル翅ヲ具ヘ其表面ノ彩色暗紫ナリ此種ハ丘岡及山背ニ飛翔ス

(一三) ギプサス、シーペストリアヌ、ヒウ（第四版第三圖）

産地　横濱、東京

期節　五月、六月

(二三) ギプサス、ルーテアヒウ（第四版第四圖）

産地　横濱、日光、北海道、淺間山

期節　五月、六月

(三三) ギプサス、ジヨナシージヤンソン（第四版第五圖）

産地　北海道、横濱

期節　六月、七月

THE

BUTTERFLIES OF JAPAN.

NOTICE.

Owing to the lamentable and untimely death of the Author on the 17th February, 1888, the preparation for the press of the unpublished portion of this Work was undertaken by JAMES BISSET, F.L.S., his intimate friend and business associate.

The descriptions from No. 30 (Niphanta fusca, Brem. and Gray) to No. 74 (Vanessa burejana Brem.) inclusive, were found in type, the final proofs of the greater part having received the Author's approval. The Notes on Collecting and Nomenclature (which will appear in Part III.) were also found in type, ready for printing. The remainder of the text has been completed from the two following sources:

(1.) The Author's own outline of the whole Work, which includes the names, synonyms, localities, food plants, and time of appearance, interspersed with notes.

(2.) The Author's Paper in the Transactions of the Asiatic Society of Japan, "A Catalogue of the Lepidoptera of Japan," read May, 1883.

All the figures down to Plate No. 7, inclusive, were found ready for publication, whilst all the original coloured drawings for Plates Nos. 8, 9, and 10, were in the lithographer's hands under contract for execution as speedily as possible.

Mr. BISSET has to thank Mr. LOOMIS and Mr. MANLEY for the assistance they have kindly afforded him in preparing the work for publication. The Japanese translation is the work of Mr. NAMYE, of the Tôkyô Educational Museum, to whom the Author had entrusted this branch of the Work.

It is believed that the whole Work is as complete as the Author originally intended, although it is feared that some valuable information in the way of additions to and modifications of the Notes to the latter portion of the text may have perished with him.